

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
23 March 2006 (23.03.2006)

PCT

(10) International Publication Number  
**WO 2006/031035 A1**

(51) International Patent Classification<sup>7</sup>: **H04B 7/26**

(21) International Application Number:  
PCT/KR2005/002979

(22) International Filing Date:  
9 September 2005 (09.09.2005)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:  
10-2004-0074421  
17 September 2004 (17.09.2004) KR  
10-2005-0011678  
11 February 2005 (11.02.2005) KR  
10-2005-0081293  
1 September 2005 (01.09.2005) KR

(71) Applicant (for all designated States except US): **RADI-  
ANT TECHNOLOGIES, INC.** [KR/KR]; 2F., Ilyang  
Bldg., 206, Nonhyun-dong, Kangnam-gu, Seoul 135-010  
(KR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KIM, Tae  
II** [KR/KR]; No.301, Oak Heights Villa, 610-43,  
Banpo-4-dong, Seocho-gu, Seoul 137-044 (KR). **HA, Tae  
Jun** [KR/KR]; No.711-1203, Byeolvit Maoul 7-danji Apt.,

Hwajeong-dong, Deokyang-gu, Goyang-si, Kyunggi-do  
412-270 (KR). **KIM, Sung Hee** [KR/KR]; No.602-106,  
Hyundai Apt., Gooeui-3-dong, Kwangjin-gu, Seoul  
143-203 (KR). **SOHN, Hyuk Jin** [KR/KR]; No. 201, Mi-  
rae-villa, 27-24, Samseong-2-dong, Kangnam-gu, Seoul  
135-864 (KR). **LEE, Won Seok** [KR/KR]; No.910-616,  
Joogong Apt., Hagye-dong, Noweon-gu, Seoul 139-230  
(KR).

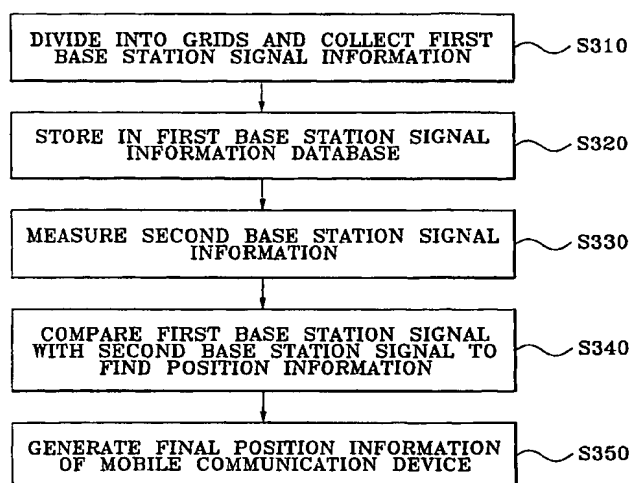
(74) Agent: **KOO, Kee Wan**; MUHANN Patent & Law Firm,  
5th Fl., Youngpoong Building, 142 Nonhyun-dong, Kang-  
nam-gu, Seoul 135-749 (KR).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KM, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM,  
PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM,  
SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN,  
YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR DETERMINING POSITION OF MOBILE COMMUNICATION DEVICE BY GRID-  
BASED PATTERN MATCHING ALGORITHM



(57) Abstract: Provided is a method and system for determining a position of a mobile communication device in a mobile communication network, the method including the steps of: dividing an area covered by the mobile communication network into a plurality of grids and collecting a first base station signal information with respect to each of the divided grids; storing and maintaining the collected first base station signal information in association with position information of the grids in a database; measuring a second base station signal information received by the mobile communication device; comparing the second base station signal information with the first base station signal information to find position information corresponding to the second base station signal information in the database; and generating final position information of the mobile communication device based on the position information found in the database.

WO 2006/031035 A1



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT,  
RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA,  
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Published:**

— with international search report